

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule encoding a *Chlamydia* high molecular weight (HMW) protein, said HMW protein comprising an amino acid sequence of SEQ ID NO.: 15.
- 5 2. An isolated nucleic acid molecule encoding a *Chlamydia* high molecular weight (HMW) protein, said HMW protein comprising an amino acid sequence of SEQ ID NO.: 16.
3. The nucleic acid molecule of Claim 1 comprising a DNA sequence of SEQ ID NO.: 23 or the complement of said molecule.
- 10 4. The nucleic acid molecule of Claim 1 comprising a DNA sequence of SEQ ID NO.: 24 or the complement of said molecule.
5. An isolated nucleic acid molecule comprising, a nucleic acid sequence which hybridizes under conditions comprising 50% formamide and 37°C to a DNA sequence which is complementary to SEQ ID No.: 23 and encodes a protein which is recognized by an
15 antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 15.
6. An isolated nucleic acid molecule comprising, a nucleic acid sequence which hybridizes under conditions comprising 50% formamide and 37°C to a DNA sequence which is complementary to SEQ ID No.: 24 and encodes a protein which is recognized by an
20 antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 16.
7. The nucleic acid molecule of claim 1, wherein the *Chlamydia* species is *Chlamydia trachomatis*, *Chlamydia pecorum*, *Chlamydia psittaci* or *Chlamydia pneumoniae*.
8. The nucleic acid molecule of claim 2, wherein the *Chlamydia* species is
25 *Chlamydia trachomatis*, *Chlamydia pecorum*, *Chlamydia psittaci* or *Chlamydia pneumoniae*.
9. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of Claim 1 or 5.
10. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of Claim 2 or 6.

11. A recombinant expression vector adapted for transformation of a host comprising the nucleic acid molecule of claim 1 or 5 and expression means operatively coupled to the nucleic acid molecule for expression.

12. A recombinant expression vector adapted for transformation of a host
5 comprising the nucleic acid molecule of claim 2 or 6 and expression means operatively coupled to the nucleic acid molecule for expression.

13. The expression vector of claim 11, wherein the expression means includes a nucleic acid portion encoding a leader sequence for secretion.

14. The expression vector of claim 12, wherein the expression means includes a
10 nucleic acid portion encoding a leader sequence for secretion.

15. A transformed host cell containing an expression vector of Claim 11.

16. A transformed host cell containing an expression vector of Claim 12.

17. A transformed host cell containing an expression vector of Claim 13.

18. A transformed host cell containing an expression vector of Claim 14.

15 19. An isolated nucleic acid molecule comprising at least 50 nucleotides of SEQ ID NO.: 23 and encoding a fragment of a *Chlamydia* high molecular weight (HMW) protein, wherein said fragment is recognized by an antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 15.

20 20. An isolated nucleic acid molecule comprising at least 50 nucleotides of SEQ ID NO.: 24 and encoding a fragment of a *Chlamydia* high molecular weight (HMW) protein, wherein said fragment is recognized by an antibody that specifically binds to a protein comprising an amino acid sequence of SEQ ID NO.: 16.

21. Isolated antisera specific for a composition comprising a nucleic acid comprising the DNA sequence of SEQ ID. NO.: 1, 23 or 24.

25 22. An isolated antibody that specifically binds a *Chlamydia* HMW protein comprising an amino acid sequence of SEQ ID. NO.: 2, 15 or 16 or an amino acid sequence encoded by a nucleic acid of SEQ ID NO.: 1, 23 or 24 or a fragment or analogue of said protein.

30 23. A method for detecting anti-*Chlamydia* antibodies in a test sample comprising the steps of:

a) contacting said sample with a *Chlamydia* HMW protein comprising an amino acid sequence of SEQ ID. NO.: 2, 15 or 16 or an amino acid sequence encoded by a nucleic acid of SEQ ID NO.: 1, 23 or 24 or a fragment or analogue of said protein to form *Chlamydia* antigen: anti- *Chlamydia* antibody immunocomplexes if said antibodies are present, and further,

b) either detecting the presence of or measuring the amount of said immunocomplexes formed during step a) as an indication of the presence of said anti-*Chlamydia* antibodies in the test sample.

24. A method for detecting the presence of *Chlamydia* in a test sample comprising the steps of:

a) contacting said test sample with the antibody of claim 22 for a time sufficient to allow said antibodies to bind *Chlamydia*, if present, and to form a *Chlamydia*: anti-*Chlamydia* antibody immunocomplexes, and further,

b) either detecting the presence of or measuring the amount of said immunocomplexes formed during step a) as an indication of the presence of said *Chlamydia* in the test sample.

25. A diagnostic kit for detecting the presence of *Chlamydia*, said kit comprising the antibody of claim 22, container means for contacting said antibody with a test sample suspected of having said *Chlamydia* and reagent means for detecting or measuring

Chlamydia: anti-*Chlamydia* antibody immunocomplexes formed between said antibodies and said *Chlamydia*.